

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A valve train system of an internal combustion engine, comprising:

a lift amount changing mechanism that changes a lift amount of an intake valve;

a determining device that determines whether it is possible to improve a fuel consumption by increasing a compression ratio of a combustion chamber on the basis of an operation state of the internal combustion engine; and

a compression ratio increasing device that increases a compression ratio of the combustion chamber by, after an intake stroke, opening and subsequently closing an exhaust valve ~~after an intake stroke~~ to introduce exhaust gas into the combustion chamber when it is determined that it is possible to improve the fuel consumption.

2. (Previously Presented) The valve train system according to claim 1, wherein the determining device determines whether it is possible to improve the fuel consumption by increasing the compression ratio of the combustion chamber on the basis of at least one of a required torque, a load rate, an opening-closing timing of the intake valve, and an air-fuel ratio of an air-fuel mixture within the combustion chamber.

3. (Original) The valve train system according to claim 1, wherein a valve-closing timing of the exhaust valve is defined by at least one of an engine speed and a required torque, the lift amount and a valve-closing timing of the intake valve at a moment before a valve-opening timing of the exhaust valve, and the pressure within the combustion chamber.

4. (Original) The valve train system according to claim 1, wherein a lift amount of the exhaust valve is defined by at least one of an engine speed and a required torque, the lift amount and a valve-closing timing of the intake valve at a moment before the valve-opening timing of the exhaust valve, and the pressure within the combustion chamber.

5. (Currently Amended) A valve train system of an internal combustion engine, comprising:

a lift amount changing mechanism that changes a lift amount of an intake valve;

a determining device that determines whether it is possible to improve a fuel consumption by admitting exhaust gas in a stratified state into a combustion chamber on the basis of an operation state of the internal combustion engine; and

an exhaust gas introducing device that ~~admits~~ starts admitting the exhaust gas in the stratified state into the combustion chamber after an intake stroke and after air intake into the combustion chamber is completed when it is determined that it is possible to improve the fuel consumption.

6. (Currently Amended) The valve train system according to claim 5, wherein, after the intake stroke, the exhaust gas introducing device serves to open and subsequently close an exhaust valve ~~after the intake stroke~~ until a pressure within the combustion chamber becomes equal to a pressure within an exhaust passage so as to admit the exhaust gas in the stratified state into the combustion chamber.

7. (Original) The valve train system according to claim 6, wherein a valve-closing timing of the exhaust valve is defined by at least one of an engine speed and a required torque, the lift amount and a valve-closing timing of the intake valve at a moment before a valve-opening timing of the exhaust valve, and the pressure within the combustion chamber.

8. (Original) The valve train system according to claim 6, wherein a lift amount of the exhaust valve is defined by at least one of quantity of the exhaust gas discharged from the combustion chamber and a temperature of an exhaust gas purifying catalyst disposed in the exhaust passage, an engine speed and a required torque, the lift amount and a valve-closing timing of the intake valve at a moment before a valve-opening timing of the exhaust valve, and the pressure within the combustion chamber.

9. (Currently Amended) A control method of a valve train system of an internal combustion engine, for changing a lift of an intake valve, the control method comprising the steps of:

determining whether it is possible to improve a fuel consumption by increasing a compression ratio of a combustion chamber on the basis of an operation state of the internal combustion engine; and

when it is determined that it is possible to improve the fuel consumption, increasing the compression ratio of the combustion chamber by after an intake stroke, opening and subsequently closing an exhaust valve ~~after an intake stroke~~ to introduce exhaust gas into the combustion chamber.

10. (Currently Amended) A control method of a valve train system of an internal combustion engine, for changing a lift amount of an intake valve, the control method comprising the steps of:

determining whether it is possible to improve a fuel consumption by admitting exhaust gas in a stratified state into a combustion chamber on the basis of an operation state of the internal combustion engine; and

when it is determined that it is possible to improve the fuel consumption, ~~admitting~~ starting to admit the exhaust gas in the stratified state into the combustion chamber after an intake stroke and after air intake into the combustion chamber is completed.

11. (Previously Presented) The valve train system according to claim 1, wherein the exhaust gas is introduced into the combustion chamber until a pressure within the combustion chamber becomes equal to a pressure within an exhaust passage.

12. (Previously Presented) The method according to claim 9, wherein the exhaust gas is introduced into the combustion chamber until a pressure within the combustion chamber becomes equal to a pressure within an exhaust passage.

13. (Previously Presented) The method according to claim 9, wherein the determining step bases its determination on at least one of a required torque, a load rate, an opening-closing timing of the intake valve, and an air-fuel ratio of an air-fuel mixture within the combustion chamber.

14. (Previously Presented) The method according to claim 9, wherein a valve-closing timing of the exhaust valve is defined by at least one of an engine speed and a required torque, the lift amount and a valve-closing timing of the intake valve at a moment before a valve-opening timing of the exhaust valve, and the pressure within the combustion chamber.

15. (Previously Presented) The method according to claim 9, wherein a lift amount of the exhaust valve is defined by at least one of an engine speed and a required torque, the lift amount and a valve-closing timing of the intake valve at a moment before the valve-opening timing of the exhaust valve, and the pressure within the combustion chamber.

16. (Currently Amended) The method according to claim 10, wherein the exhaust gas is admitted into the combustion chamber by after the intake stroke, opening and subsequently closing an exhaust valve ~~after the intake stroke~~ until a pressure within the combustion chamber becomes equal to a pressure within an exhaust passage so as to admit the exhaust gas in the stratified state into the combustion chamber.

17. (Previously Presented) The method according to claim 16, wherein a valve-closing timing of the exhaust valve is defined by at least one of an engine speed and a required torque, the lift amount and a valve-closing timing of the intake valve at a moment before a valve-opening timing of the exhaust valve, and the pressure within the combustion chamber.

18. (Previously Presented) The method according to claim 16, wherein a lift amount of the exhaust valve is defined by at least one of quantity of the exhaust gas discharged from the combustion chamber and a temperature of an exhaust gas purifying catalyst disposed in the exhaust passage, an engine speed and a required torque, the lift amount and a valve-closing timing of the intake valve at a moment before a valve-opening timing of the exhaust valve, and the pressure within the combustion chamber.

19. (Previously Presented) The valve train system according to claim 5, wherein the exhaust gas introducing device admits the exhaust gas in the stratified state into the combustion chamber without diffusing the stratified exhaust gas throughout the combustion chamber.

20. (Previously Presented) The method according to claim 10, wherein the exhaust gas is admitted in the stratified state into the combustion chamber without diffusing the stratified exhaust gas throughout the combustion chamber.

21. (New) The valve train system according to claim 1, wherein the compression ratio increasing device increases the compression ratio of the combustion chamber by opening and subsequently closing the exhaust valve to introduce the exhaust gas into the combustion chamber after the intake stroke and after air intake into the combustion chamber is completed.

22. (New) The method according to claim 9, wherein the step of increasing the compression ratio of the combustion chamber includes opening and subsequently closing the

exhaust valve to introduce the exhaust gas into the combustion chamber after the intake stroke and after air intake into the combustion chamber is completed.